

Appendix E

Reasonably Foreseeable Development Scenario Calculations

Although at this time it is unknown when, where, or if future oil and gas exploration and development might be proposed on any leased parcel, should a lease be issued, site specific analysis of individual wells, roads, pipelines and/or other facilities would occur when a lease holder submits an APD. For the purposes of this analysis, the BLM assumed oil and gas development would continue to occur as predicted in the Monticello planning area “Reasonably Foreseeable Development Scenario (RFD) for Oil and Gas” (Vanden Berg, 2005), the Moab planning area “Reasonably Foreseeable Development Scenario for Oil and Gas” (McClure, Nothrup, Fouts, 2005), and the Canyon Country District “Reasonably Foreseeable Development Scenario for Oil and Gas in the Moab Master Leasing Plan Area” (McDougall, Jones, 2012); and oil and gas development would occur proportionate to acres of oil and gas leases authorized.

- Assumptions used in determining the RFD for 2018 Oil and Gas Lease Sale:
 - BLM lands in the RFD include BLM surface and split estate (private, Navajo Indian) lands with federal oil and gas mineral estate.
 - The RFD projections are based in part on past leasing and drilling activity.
 - Drilling activity will occur on lands with authorized oil and gas leases, therefore;
 - Drilling activity and surface disturbance from the proposed action will be proportionate based on the acreage of the proposed action and current authorized lease acreage.

The following tables show the adjustments made to the Monticello and Moab RMP RFDs based on the acreage included in the Moab Master Leasing Plan area.

Monticello FO RMP RFD Acreage

Land Status	Lands included in the RFD	Percent	Lands removed by Moab MLP	Lands remaining in the RFD	Percent
BLM	1,398,271	38	203,943	1,194,328	35
State	202,318			202,318	
Indian Reservation	1,278,473			1,278,473	
Private	353,515			353,515	
US Forest Service	319,932			319,932	
Glen Canyon Nat. Rec. Area	101,720			101,720	
Total	3,654,229			3,450,286	

Moab FO RMP RFD Acreage

Land Status	Lands included in the RFD	Percent	Lands removed by Moab MLP	Lands remaining in the RFD	Percent
BLM	1,821,374	68	579,438	1,241,936	60
State	346,542			346,542	
Indian Reservation	198,106			198,106	
Private	156,199			156,199	
US Forest Service	141,241			141,241	
Total	2,663,462			2,084,024	

MLP RFD Acreage

Land Status	Lands included in the RFD	Percent
BLM	783,381	83
State	126,281	
State Parks	4,377	
Private	32,430	
Total	946,469	

The following calculations determine the percentage of 2018 lease parcel acreage would make of total authorized oil and gas leases.

Monticello Field Office

Authorized Leases	166,032	
Preliminary list	36,015	18%
Total	202,047	

Moab Field Office

Authorized leases	420,380	
Preliminary list	10,525	2%
Total	430,905	

Monticello Field Office Area

The MtFO RFD was prepared for the Monticello planning area to predict the level of oil and gas development over the next 15 years for the purpose of analyzing impacts from oil and gas development to other resources in the MtFO PRMP. The RFD included:

- BLM lands available for oil and gas leasing and development are 35% of the total acreage available to oil and gas leasing and development in the RFD area.
- Over the next 15 years, 195 wells would be drilled on all lands within the Monticello planning area;
- Thirty five percent of 195 wells would be 68 wells drilled on BLM lands over the next 15 years.
- Each well and associated roads and pipelines would result in approximately 9.6 acres of surface disturbance (four acres for well pad construction; six acres for roads, pipelines, other facilities).
- Over the next 15 years, new oil and gas exploration and development activities on BLM lands would cause surface disturbance of 653 acres (68 wells \times 9.6 acres = 653 acres).
- Annual surface disturbance = 44 acres (653 acres \div 15 years = 44 acres per year).

Currently in the MtFO:

- At the present time (2017.06.29) there are approximately 166,032 acres under authorized federal oil and gas lease.
- The Monticello Field Office March 2018 lease parcels total approximately 36,015 acres.
- If all offered parcels were sold and leases issued, the March 2018 leases would amount to 18% of the authorized oil and gas leases in the MtFO (166,032 + 36,015 = 202,047; 36,015 \div 202,047 \approx 18%).

- RFD predicted surface disturbance = 44 acres per year \times 18% \approx 8 acre per year of surface disturbance resulting from the March 2018 lease sale.
- 68 RFD predicted wells \div 15 years = 5 wells per year \times 18% \approx 1 well per year resulting from the March 2018 lease sale.
- Surface disturbance resulting from March 2018 lease sale oil and gas exploration and development would occur over a 10-year period (period of a lease not held by production).
- Surface disturbance resulting from the March 2018 lease sale would be 8 acres per year \times 10 years = 80 acres to surface disturbance total.

Moab Field Office Area

The MFO RFD was prepared for the Moab planning area to predict the level of oil and gas development over the next 15 years for the purpose of analyzing impacts from oil and gas development to other resources in the MFO PRMP. The RFD included:

- BLM lands available for oil and gas leasing and development are 60% of the total acreage available to oil and gas leasing and development in the RFD area.
- Over the next 15 years, 600 wells would be drilled on all lands within the Moab planning area.
- Sixty percent of 600 wells would be 360 wells drilled on BLM lands over the next 15 years.
- Each well and associated roads and pipelines would result in approximately 15 acres of surface disturbance (five acres for well pad construction; 10 acres for roads, pipelines, other facilities).
- Over the next 15 years, new oil and gas exploration and development activities would cause surface disturbance of 5,400 acres on BLM lands (360 wells \times 15 acres/well = 5,400 acres).
- Annual surface disturbance = 360 acres (5,400 acres \div 15 years = 360 acres surface disturbance per year).

Currently in the MFO:

- There are approximately 420,380 acres under authorized oil and gas lease at the present time (2017.06.29).
- The Moab Field Office March 2018 lease parcels total approximately 10,525 acres.
- If all offered parcels were sold and leases issued, the March 2018 leases would amount to 2% of the authorized oil and gas leases in the MFO (420,380 + 10,525 = 430,905; 10,525 \div 430,905 \approx 2%).
- RFD predicted surface disturbance = 360 acres \times 2 % \approx 7 acres per year of surface disturbance resulting from the March 2018 lease sale.
- 360 RFD predicted wells \div 15 years = 24 wells per year \times 2.5 % \approx 0.5 well per year resulting from the March 2018 lease sale.

- Surface disturbance resulting from March 2018 lease sale oil and gas exploration and development would occur over a 10-year period (period of a lease not held by production).
- Surface disturbance resulting from the March 2018 lease sale would be 7 acres per year \times 10 years = 70 acres of surface disturbance total.

Canyon Country District Summary

The following table summarizes the predicted well development and surface disturbance resulting from the March 2018 Oil and Gas Lease Sale.

CCDO Predicted Oil and Gas Exploration and Development; and Surface Disturbance

Area	Predicted Wells Per Year	Total Predicted Wells (10 years)	Predicted Annual Surface Disturbance	Total Surface Disturbance (10 years)
Monticello Field Office	1	10	8 acres/year	80 acres
Moab Field Office	0.5	5	7 acres/year	70 acres
Canyon Country District Total	≈ 2	15	15 acres/year	150 acres

The 150 acres of surface disturbance estimated to result from exploration, development and production activities resulting from the proposed March 2018 lease sale amounts to 0.32 % of the acreage included in the lease sale (150 acres of surface disturbance \div 46,540 acres in lease sale = 0.32%).